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Docket No. 070-00033

License No. SNM-23

Mr. Michael Elliott Environmental Manager Texas Instruments, Inc. 34 Forest Street Attleboro, MA 02703

SUBJECT:

SPECIAL INSPECTION NO. 94-002/070-00033

Dear Mr. Elliott:

On August 24, 1994, Mark C. Roberts of this office conducted a special, announced safety inspection at the above address and at an area along Holden Street, in Attleboro, of activities authorized by the above listed NRC license. The inspection was limited to a review of the possible disposal of licensed material in the fill area along Holden Street. The inspection consisted of observations by the inspector, interviews with personnel, independent measurements by the inspector, and an examination of selected aerial photographs.

The inspector also gathered information during telephone conversations on February 15, 1995 with James Mooney of the Attleboro Health Department, and February 22, 1995 with Paul Jost of your office. The preliminary findings of the inspection were discussed with Jay Eidson and Mary McGarigle of CDM Federal Programs Corporation and you on August 24, 1994. A copy of the NRC inspection report is enclosed.

Within the scope of this inspection, no violations were identified.

As agreed during the inspection, you conducted various radiation surveys and provided the results with your letter dated January 12, 1995.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed report will be placed in the Public Document Room. No reply to this letter is required.

Your cooperation with us is appreciated.

Sincerely,

ohn D. Kinneman, Chief

Site Decommissioning Section Division of Radiation Safety

and Safeguards

M. Elliott

Docket No. 070-00033 License No. SNM-23

Enclosure: Inspection Report No. 070-00033/94-002

cc w/encl: Commonwealth of Massachusetts

Carl Dorrance Treasurer Dorrance Excavating Contractor 283 West Main Street Norton, MA 02766

Nancy Smith
Massachusetts Site Assessment Manager
U.S. Environmental Protection Agency
Region I
JFK Federal Building
Boston, MA 02203-2211

U. S. NUCLEAR REGULATORY COMMISSION REGION I

Report No.

070-00033/94-002

Docket No.

· <u>070-00033</u>

License No.

SNM-23

Licensee:

Texas Instruments, Inc.

34 Forest Avenue

Attleboro, Massachusetts 02703

Facility Name:

Texas Instruments, Inc.

Inspection At:

<u>Texas Instruments, Inc.</u> Attleboro, Massachusetts

Attreburo, Massachusetts

<u>Fill area along Holden Street</u> <u>Attleboro, Massachusetts</u>

Inspection Conducted:

August 24, 1994

Inspector:

Mark C. Roberts, Senior Health Physicist

3-14-95

Date

Approved by:

John D. Kinneman Chie

John D. Kinneman, Chief Site Decommissioning Section Date

Areas Inspected: Announced special inspection to review possibility that licensed material was transferred to an area on Holden Street including a visit to Holden Street fill area in Attleboro; radiation measurements in the Holden Street fill area; site visit to Texas Instruments facility in Attleboro, review of aerial photographs and radiological survey data (radiological survey data provided in letter dated January 12, 1995); contact with the Attleboro Health Department to identify well water use. Final information for this report was received on February 22, 1995.

<u>Results:</u> It is unlikely that licensed radioactive material originating at the Texas Instruments, Attleboro, Massachusetts facility was transferred to the Holden Street fill area. No violations were identified.

DETAILS

1.0 Persons Contacted

*Michael Elliott, Environmental Manager, Texas Instruments, Inc.
*Jay Eidson, Site Management Consultant, CDM Federal Programs
Corporation
*Mary McGarigle, Environmental Scientist, CDM Federal Programs
Corporation
Carl Dorrance, Treasurer, Dorrance Excavating Contractor, Inc.
Emily Brunkhurst, Massachusetts Audubon Society (via telephone on
September 12, 1994)
James P. Mooney, Health Agent Director, Attleboro Health Department
(via telephone on February 15, 1995)
Paul Jost, Facilities Department, Texas Instruments, Inc. (via

*Denotes those present at exit interview.

telephone on February 22, 1995)

2.0 Background

The Texas Instruments, Inc. (TI) facility is located in Attleboro, Massachusetts, 48 kilometers (30 miles) south of Boston. The site is approximately 40 hectares (100 acres) with twelve major buildings. Operations with radioactive materials commenced at the site in 1952 when the General Plate Division of Metals and Controls, Inc. began to fabricate enriched uranium foils. That company merged with TI in 1959. Texas Instruments fabricated enriched uranium fuel elements for the U.S. Navy and commercial customers from 1959 through 1983. Depleted uranium was also used at the facility for research and development.

During the time period that the licensee conducted activities with licensed material on the site, scrap material and equipment contaminated with uranium were buried in a disposal area between Building 11 and what is now Building 12. This area was the subject of remediation and final surveys which were completed in October 1993. A confirmatory survey in this area, conducted by the Oak Ridge Institute for Science and Education (ORISE) in December 1993, did not identify residual contamination in excess of the current criteria for release for unrestricted use. Other exterior locations on the site were also contaminated with uranium as a result of the licensed operations. In particular, an area near Building 5, where zirconium chips contaminated with uranium were incinerated, has recently been remediated. The licensee is in the process of performing a radiological survey of the entire site to determine if there is any remaining uranium contamination.

From the 1960's through the 1980's, TI conducted several major construction projects on the site which required the excavation of soil in the area of the construction. These included the construction of Building 12, additions to Building 11 and addition of a railroad spur west of Buildings 10 and 11. Some of the excess soil generated by these projects was removed from the site and was disposed at other locations. NRC Region I and EPA Region I are reviewing the disposal of excavated

soil at a site along the Bungay River near Holden Street in Attleboro to determine whether that site was contaminated with licensed material (depleted and/or enriched uranium). Metallic debris of industrial origin has apparently been identified in fill material in the Holden Street area. The metallic debris apparently includes items that were manufactured by TI. Based on newspaper accounts and a conversation with a representative from the Massachusetts Audubon Society, a portion of this area is being considered for a nature preserve/park.

Since the TI Attleboro, Massachusetts facility is currently licensed by the NRC, EPA Region I has deferred jurisdiction to the NRC and does not plan further investigation under the EPA Superfund Site Assessment program.

3.0 <u>Visit to Holden Street Fill Area</u>

The inspector met with representatives from CDM Federal Programs (an EPA Region I contractor), Texas Instruments Inc., and Dorrance Excavating Contractor, Inc. (Dorrance Excavating) at the Holden Street fill area. Dorrance Excavating is a family owned and operated company in nearby Norton, Massachusetts. The fill area, a parcel of land approximately 4 acres in area, is owned by a member of the Dorrance family. The fill area has been used since approximately 1957 to receive fill from various excavation jobs of the company. Use of the area to receive fill stopped in approximately 1977. Fill material, consisting of miscellaneous soils, rocks and tree trunks, was placed in this marshland area with the consideration that the land could be used for future residential development. From discussions with Mr. Dorrance, the source of the fill material was primarily excavation work done at school construction projects in and around the city of Attleboro. A newspaper article from the October 26, 1966 issue of the Attleboro Sun (Attachment 1) also describes the type and source of material that had been placed in the fill area.

The fill area is bordered by the Bungay River to the west, Holden Street to the north, Benefit Street to the east and to the south by the extension of Oak Street. The area is overgrown with dense vegetation and not readily accessible. With the permission of Mr. C. Dorrance, the group gained access to the fill area from the east by cutting down some of the vegetation to create a path to the fill area. Due to the significant vegetation, the terrain in the fill area was difficult to assess. However, the area appeared to be relatively level with some gentle undulations and a few small hillocks. The western edge of the parcel slopes toward the Bungay River. Numerous marshy areas were encountered during the walk around the property.

Mr. Dorrance estimated that the depth of the fill ranged from 0 to approximately 10 feet thick with a total volume of approximately 10,000 yd. The additions of fill were not documented nor was documentation required. Although the successive dumpings of fill were generally spread to maintain a relatively flat terrain, there was no apparent attempt to ensure that the fill was graded. A requirement that fill not

be dumped in the river was incorporated into later dumping permits that authorized the use of the area for the placement of fill. Mr. Dorrance stated that he was not aware of any dumping of fill into the Bungay River and that he thought such dumping unlikely since the area immediately adjacent to the river was too soft to allow for trucks or other equipment to drive without becoming stuck.

Mr. Dorrance also stated that soil from construction activities on the TI site in Attleboro was placed in the fill area. The soil removal activities were conducted in approximately 1976. At that time, Mr. Dorrance worked in the family business as a dump truck driver and he worked on that excavation project. Mr. Dorrance offered to identify the location at the TI Attleboro site where the soil was excavated and removed to the Holden Street fill area.

No safety concerns were identified.

4.0 Site Visit to Texas Instruments facility in Attleboro

The inspector requested and received permission from the Texas Instruments' representative for the group to meet at the TI site to examine possible locations where soil was removed from the TI site and transported to the fill area along Holden Street. Mr. Dorrance accompanied the group and identified the addition to Building 11 that lies south and east of the original building as the area that was excavated and from which the soil removed and placed in the Holden Street fill area. He stated that the excavation of the area was accomplished using a dragline; a large volume construction bucket suspended from a tall boom and dragged via a cable through the area to be excavated. The material captured by the bucket was then loaded into trucks for transport. This method is apparently useful for soft soil and shallow excavation depths. Mr. Dorrance stated that the excavated material that was removed appeared to be a dark soil, similar to the indigenous peat soil present in the area. The methodology used for soil removal and the appearance of the excavated material was independently confirmed through discussions with another representative from TI who was familiar with the project. He confirmed that the excavation was performed in approximately September 1976 through examination of construction drawings. Mr. Dorrance stated that this was the only location that he was aware on the TI Attleboro site where soil was removed and dumped at the Holden Street fill area.

No safety concerns were identified.

5.0 Radiation Measurements in the Holden Street Fill Area

The inspector made measurements of the exposure rate during the traverse of the Holden Street fill area using a Ludlum Model 19 Micro R Meter (NRC Serial No. 33513, calibration expires June 9, 1995). The exposure rates measured along Holden and Benefit Streets were approximately 11

 μ R/hour at one meter above the ground. The measured exposure rates throughout the Holden Street fill area were not distinguishable from this measured background exposure rate.

No safety concerns were identified.

6.0 Review of Aerial Photographs and Radiological Survey Data

An aerial photograph of the TI Attleboro site from April 15, 1966 and a second aerial photograph from approximately 1987 or 1988 (Attachments 2 and 3) were examined by the inspector. The 1966 photograph was taken prior to the construction of Building 12 and the additions to Building 11 since these structures do not appear in the photograph. The railroad spur is shown on the 1966 photograph. Discussions with TI representatives indicate that excavation of the railroad spur commenced in approximately November 1965. The burial area that lies between Building 11 and what is now Building 12 is also shown in the 1966 photograph. Construction on Building 12 commenced in the summer or fall of 1966.

From an examination of the 1966 photograph and a comparison to the 1987/88 photograph, it appears that the land where the southeast addition to Building II was constructed is undisturbed. This supports the information provided by Mr. Dorrance and the TI representative that the excavated material from this area in 1976 was the indigenous peat soil of the area.

Following the remediation of the burial area, between Buildings 11 and 12, confirmatory surveys including soil sampling and analyses were performed by ORISE (Oak Ridge Institute for Science and Education) in February 1994. The inspector reviewed the data from that survey. Total uranium concentrations in soil from the borings (typically taken at the surface and depths of 1 meter and 2 meters) beyond the southern and eastern perimeters of the burial area are all less than or equal to 10 pCi/gram. The data indicates that the burial area between Buildings 11 and 12 on the TI Attleboro site did not extend into the area that was excavated for the additions to Building 11.

The TI Environmental Manager stated that TI would perform walkover radiological survey of the entire site. The inspector requested that TI provide information concerning radiological measurements performed south and east of Building 11. This information was provided to Region 1 in a letter dated January 12, 1995. These surveys did not identify any locations in excess of 1.5 times the background exposure rate and thus no further sampling was performed.

No safety concerns were identified.

7.0 Contact with the Attleboro Health Department to Identify Well Water Use

The inspector contacted a representative from the Attleboro City Health Department for information concerning well water use in the vicinity of the Holden Street fill area. The Health Department representative stated that a city water well is immediately downstream of the Holden Street fill area, but that the well has not been used in approximately seven years and was recently capped. The well supplied potable water; however, the high iron content of the water causes the water to be undesirable to consume. The well was always a secondary source of water and was only used for short durations during peak demand in late summer. The entire community around the Holden Street fill area is served by the municipal water supply which obtains water from a different watershed area than the Bungay River area. The representative was not aware of any private wells in the area supplying drinking water.

No safety concerns were identified.

8.0 <u>Conclusions Concerning Buried Licensed Material at Holden Street</u>

Fill material consisting primarily of soil, rocks and tree trunks from numerous excavation projects, including one major construction project at the TI Attleboro site, was dumped by the property owner at a privately-owned parcel of land along Holden Street and the Bungay River in Attleboro. Discussions with a representative of Dorrance Excavating who performed these activities indicated that the material removed from the TI site was dumped at Holden Street in approximately 1976 and consisted of material that appeared to be similar to the indigenous peat-like soil found in the area. Neither this excavating company representative nor a TI representative were aware of any other movements of fill from the TI Attleboro site to Holden Street.

Inspection of the Holden Street fill area did not reveal the presence of any radioactive material or debris. Radiation exposure rates measured in the Holden Street fill area were not different than background radiation exposure rates made nearby the fill area. Metallic items reported to have been found at the Holden Street fill area ("Klixon" thermostatic disks manufactured by TI) do not contain radioactive material.

A review of available photographs and radiological survey data from the vicinity of the excavated area of the TI Attleboro site where soils were removed to the Holden Street fill area indicate that the area did not likely contain any significant quantity of licensed material.

All available information indicates that the soil removed from the TI Attleboro site and placed at the Holden Street fill area does not contain licensed radioactive material.

9.0 Exit Interview

The results of the inspection were discussed with the licensee representative identified in Section 1.0.

who allegedly struck am West in his office but been given two the house of torroc-both have been sus-two years with pro-

dward Lee found Rus eres, formerly of At-now of Charlestown, the probation officer, be allowed to wanted W. LaPointe, 28, of marshland next to the Bungay cort Ave., Pawinchet, River, off of Holden Street. aced to one year in

appealed the find-

ead laceration.

antry Award esented To or Collins

(AP)-Mayor John s of Boston today re-Children and Adults.

vice president of Hoof America, who was the board of trustees.

Views Mixed On Plan To Fill Marshland

erea, formerly of Atnow of Charlestown,
saaukt and battery and
ponents were strong last night
ward the river.

To the best of my knowledge
land since 1956. The fill has inleft hefore a mayor's public hear
To the best of my knowledge
land since 1956. The fill has inleft in the New England area. threat. He also or before a mayor's public hear-mierce to make resting as to whether Melvin G. Dor-West in an amount to rance, 17 Dorrance St., should robation officer, be allowed to dump fill into

of correction and state law relative to the preservature being found guilharge of operating to and inland water ways - which went into effect a year ago, Dor-rance asked for the hearing bewas set at \$100 fore the city executive, as now williams of 437 required by law is order to con-North Attleboro, had liave dumping fill in the marat-complaint against him land, now owned by his wife,

cases continued by the commission, opposed by the cases continued by the case of the case charged with driving ground would force the soft rivlicense, using a motor ground would force the soit fiv-ithout authority, drivdanger and leaving the that a marshland is Nature's river's course. He also noted danger and leaving the am accident after causerly damage. The other accused of driving a license and using a license and using a ust authority.

The Patrolman Herbert said the two had takthat later was involved ident on Pine Street, Oct. 8.

the ear went off the knocked down 28 feet wall. The driver was decreased to Hospital where sold laceration of the cessors were required to Bungay River Bungay River.

John A. Siddell Jr., 151 Hold-en St., supported Moreau's opposition. John G. Oliver, 33 Crossman St., said the fill being dumped by Dorrance in the area is "too soft" to build cellar boles.

FILL Too High

Arthur P. Schneider, 82 Benefit St., whose land abuts the marshland, expressed concern that the fill was higher than his land, therefore feared that rais land, therefore feared that land, therefore feared that land, therefore feared that land, therefore feared that land, therefore feared tha e first gallantry award that the fill was higher than his aster Seal Society for land, therefore feared that raise al course into the river but re-

Contours Controlled

of America, who was the board of trustees.

James A. Freeman of Attletoro, a private civil engineer to urge every neighbor, relative moving through the hired by Dorrance, told Mayor and friend to be sure to vote on Canal from the At-Piggott that he has attempted to Question Five — and favorably TAIPEI. Formesa develop the contours of the land in an orderly way so that

these contours have not inter-fered with the lands of abutting cluded black soil, rocks and tree blome owners," Freeman said. Stimps. Most of the waste has late Michael and Julia (Leddy) bospital in Noriolk with the ac-led did not that the contour come from excavation work he Galligan, and had worked at tive disease. next to the Schnelder property has done at schools in the city, the Marathon Co.

inregistered and uninrance, told Mayor Thomas A is four acres, one and one-half him and Dorrance became some whole and carryregory W. Carter of bury St., Boston were to Nov. 15.

Official Opposition

RICT, TAUNTON

year-old Seekonk boys

cases continued by interested and server.

Portance noted that the area and one-half him and Dorrance became some who the steed over that point. The funeral will be conducted friday morning from the Foley four yards of fill will be somewhat the time residential develop square yards of fill will be somewhat the city square yards of fill will be somewhat the steed over that point. Will you're so concerned about that, then why doesn't the city square yards of fill will be seeded to do the job. Rough estimates by Freeman placer the amount at about 40,000. Dorrance asked.

Official Opposition

Raymond A. Moreau, chair man of the Attleboro Conservation Commission, opposed strong. other three years.

Sower Ructom

As to sewage disposal for a The mayor said, after the possible development, Dorrance hearing, that he would study the

he said.

well toward the best interests marshlands were valuable in ob-

sion with state officials and local persons involved before making his decision.

said he would install a complete verbatim notes, obtained by a sewer system to be hooked onto stenographer, and discuss the the city's system and would in situation with the Atlieboro stall the necessary pumping fac-littles if necessary. As to the servation Commission and the soft fill being dumped, be said, Department of Public Works be-"I admit it's soft when it is fore making a decision on Mrs. dumped, but when it dries out Dorrance's petition to continue dumping fill into the marshland.

Home Owners' Hopes Hinge On 'Yes 5', Taxpayers Told

The most important vote to tinuance of the sales tax, the be case by any citizen in the up-speakers pointed out.

coming election will be a "Yes" Loss of the income from the

vote on Referenda Question No. sales tax could mean an in-Five, James Zora, Attleboro crease in real property and per-chairman of the Mass. Commit-sonal taxes, a rise is the state tee for Cities, Towns and Schools income tax, and for those who

danger that the sales tax now ority of the members of the sustaining the bopes of people House of Representatives ement by a physically main stagnant on his property. Sustaining the hopes of people House of Representatives cap."

Gl, suffered a crip dust created by the Dorrance school, for keeping their tax tatives strongly supported the rate within reason, may be degreened in a companied on Nov. 2.

ostrack in 1835 but, trucks traveling to and from the confined to a whoel-in election to a four-in as mayor in 1935 and dust bowl," he said. "Aren't was defeated by for-was defeated by for-beated in 1833. Last those trucks supposed to be coverament of the Commonwealth for the balance of the year or was defeated by for-Endicott Peabody in the Democratic nomes over a fill could be dug provide means of bringing of New England Endown fill in tree trunks."

A central beadquarters for the society, was defeated by for-set of well of the balance of the year or way is to vote continuance on the reference, be added.

A central beadquarters for workers in behalf of the society, and will again if they are called upon, Bliss said. The district the support is firmed upon, Bliss

Contours Controlled

James A. Freeman of Attleboro, a private civil engineer
liked by Dorrance, told Mayor
living out that he has attempted to
levelop the contours of the lead

Actool cafeteria.

Both speakers urged listeners
loin the group which is plan.

Mass Sung For

a full note on the quest

Attachment 1

Report No. 070-000

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Attachment 1

Report No. 070-000

asses Away

Matthias C. Galligan, 87, husband of Catherine A. (Laber) live germ are failing to take Galligan of 70 Dunham St., died care of themselves," said Mir-

Surviving besides his widow water would run out of this property toward the river.

The engineer said that the filled area would make a "fine" Dorrance would color the river residential development "if up Offers To Sell Lang this city, and Mrs. Ruth Lang of Woodsville, N. H.; of the new medicines, and the cantours I Offers To Sell Rate Sons. Edward F. and person must not abuse his Moreau also indicated that marshlands were valuable in obstructing flash floods going down a river. The discussion between the city: 13 grand and three great again if the person doesn't entered the contract of the contract

Sweetland Dies

ton) Sweetland, he had been employed by the Jarvis Tap Co. North Attleboro, for 15 years in Attleboro who have histories and was a member of the Paw of tuberculosis. Most are recommunicant of St. Leo Church and a member of the parish bowling league.

He is survived by four sis-Plainville, Mrs. Thomas Carsis Case Register, Boston, to
Thomas Dineet of Cumberland and Mrs. William Gray Jr. of Pawtucket: a brother, George
P. Sweetland of Pawtucket.
The funeral will be held Friled the stock market to a vig.

Funeral Home, with a solemn early this afternoon, requiem Mass at 9 a.m. in St. The top steelmaker Leo Church, and burial in Mt. St. Mary Cemetery.

Rites Held For Mrs. A. B. Curry

ATTLEBORO SOUTH requiem Mass for Mrs. Annie B. (Ryan) Curry was celebrated ing that the company expected this morning in St. Theresa Church by the Rev. Gerard Chabot. The Rev. Rene Gagne conducted the committal service in St. Francis Cemetery, Pawtuctiket. Serving as bearers were Frederick Gordon, Leo Fontaine, Ronald F., Dennis, Fred Jr. and Fred Clarke Sr.

Mrs. Curry, formerly of 143 of 60 stocks at noon was up Cumberland Ave. and widow of 25 at 288.4 with industrials up Church by the Rev. Gerard Cha-

Report No. 070-00033/94-002 Newspaper Article Attleboro Sun, October 26, 1966

I.I. C. Agliiffail | Danaci In Attleboro

Tuberculosis is present in A: ? tleboro, and its potential c: spreading is becoming greater "Many people with the inacsaid Mits.

The contractor said he has yesterday following an ex. Dorothy McManus, public health been dumping fill in the marsh lended illness. Mr. Galligan, long a sulky ra- She noted that as of next cer in the New England area, week, there will be four Attle-

Miss McManus said the

assured Schneider that an adpustment would be made so that
water would run off of his property toward the river.

Basile Santa de didn't be are four daughters. Sister Cath out in Attleboro due to new
water would run off of his property toward the river.

Basile Santa de didn't be are four daughters. Sister Cath out in Attleboro due to new
water would run off of his prosoft river bottom to rise. Freeperty toward the river.

Heart Convent, Fall River; the Bristol County TB Sanitorman said, however, that if that Mrs. Albert A. (Helen) Robislum in January 1963, "is false."

again if the person doesn't ge! the proper amount of ford smokes too much. Then the person has to be confined in the sanitorium until the germ is arrested

Of the four with the active germ, two are being covered by insurance policies, another is paid by the family, and the city pays the tab on the fourth one. It costs \$27.78 per day per PAWTUCKET — William L. Most patients have to remain Sweetland, 34, of 85 Hanover there about a year, depending Ave., died yesterday at home following a long illness.

Most patients nave to remain there about a year, depending on how they respond to the treatment. The Commonwealth the commonwealth and the commonwealth are the commonwealth are the commonwealth and the commonwealth are the commonwealth are the commonwealth and the commonwealth are the commonwealth are the commonwealth and the commonwealth are the commonw Born in Pawtucket, son of the pays half of the daily rate, leavate George T. and Mary (Wharing \$13.89 per day to be paid by the family, insurance or city.

quired to have an annual TR X-ray: others, more often, depending upon a doctor's orders. Each January, Miss McManus ters, Mrs. Walter Skawinski of sons for the Central Tuberculo conducts a survey of these per-

In Wall Street

day from the Manning - Heffern orous rally with trading heavy

The top steelmakers advanced more than 2 points each in response to the U.S. Steel dividend boost and Bethlehem's report of its biggest third-quarter profits in history.

As trading warmed up, the pace was the fastest of this week.

Analysis "Big interpreted Steel's" dividend hike as mean profits to rise ir future quarters.

Big Three autos, which suf-

Sicels were ahead from the



